

CLAIMS:

1. A method of wedge-bonding wires in the manufacture of electronic devices, wherein:

- 5
- a reversible bonding tool is used having a wedge-bonding tip at opposite ends of the tool,
 - and, after using the wedge-bonding tip at one end for bonding wires, the tool is reversed to use the wedge-bonding tip at the opposite end for bonding further wires.

10

2. A method according to Claim 1, wherein the bonding tool comprises a shank of tungsten carbide having the wedge-bonding tips at opposite ends of the shank.

15

3. A method according to Claim 1 or Claim 2, wherein the wires comprise aluminium or gold and are ultra-sonically bonded using a transducer coupled to the tool.

20

4. A wire-bonding machine for ultrasonic wedge-bonding of wires in the manufacture of electronic devices, wherein the machine includes a reversible bonding tool having a wedge-bonding tip at opposite ends of the tool, and a mount for coupling the tool to an ultrasonic transducer, the mount allowing the tool to be reversed so as to permit wire bonding using either the wedge-bonding tip at one end or the wedge-bonding tip at the opposite end.

25

5. A wire-bonding machine according to Claim 4, wherein the bonding tool comprises a shank having the wedge-bonding tips at opposite ends of the shank, and wherein the mount engages the tool at a position on the shank between its opposite ends.

30

6. A reversible bonding tool for use in a method according to any one of Claims 1 to 3 or in a machine according to Claim 4 or Claim 5, wherein the tool comprises a shank having a wedge-bonding tip at opposite ends of the shank.

5 7. A reversible bonding tool for use in a method according to any one of Claims 1 to 3 or in a machine according to Claim 4 or Claim 5, wherein the tool comprises a shank having at its opposite ends a material which is different to that of the shank and which provides a wedge-bonding tip at each of the opposite ends of the shank.

10

8. A machine according to Claim 4 or Claim 5 or a tool according to Claim 6 or Claim 7, wherein the wedge-bonding tips at opposite ends are of tungsten carbide.

15 9. An electronic device, for example an integrated circuit or a power semiconductor device, that includes connections in the form of wires which are wedge-bonded using a method or machine or tool according to any one of the preceding Claims.